

Nexus between Managerial Compensation and Financial Performance, Size of the Firm & Risk of Indian Manufacturing Companies: A Study on Automobile Companies

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Abstract

In India the issue of managerial compensation has been seen with greater importance since the start of liberalisation, privatization and globalisation. More specifically, after the collapse of some renowned large companies namely, Satyam Computers, Enron, Tyco, WorldCom etc., the issue on managerial compensation has come to the centre of debate. Top executives of those companies were granted Employee Stock Option Plan as a regular practice even when the company were making huge losses. As a result, top executives were made huge money depriving the shareholders. Top executives also used company's fund for personal use and shareholders, the real owners of the funds were deprived. In this context, we have made an attempt to explore the interrelationships between managerial compensation, firm performance and firm characteristics parameters by studying some selected Indian automobile companies. A linear regression model that captures compensation data along with key financial performance and corporate characteristics parameters are used to explain the determinants of managerial compensation. It is found that return on capital employed, market capitalisation, firm size and debt equity are the significant determinants of managerial compensation.

JEL Classification: M12, L25, G32, , M41.

Keywords: Managerial Compensation; Firm Performance; Leverage; Accounting.

Section I

Introduction

The post-liberalisation period has seen a sound increase in managerial compensation at

all levels. Increasing profitability of companies, compensation for managerial talents and the practice of benchmarking company policies with global standards have all contributed towards the rise in managerial compensation. All these changes have paved the new ways in which managerial compensation is decided and enforced in Indian companies. Though it is the right of the shareholders and public to know information related to compensation packages of companies; the top executives of those mentioned companies never disclose those information to shareholders and when they are forced to expose it before the shareholders, they made certain rules and regulations and tried to hide them back. Top executives always tried to manage the situation by preparing duplicate financial statement. This was the main reason behind the liquidation of those

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giant companies.

The compensation of managerial personnel depends on many variables namely, size of company, company performance, incumbent's contribution to the decision making process. When a firm earns more profits, the managerial compensation also became increased. In this context, the study has tried to explore the nexus between managerial compensation and financial performance taking some selected sample companies from Indian Automobile Companies. The rest of this paper is organised as follows: Section II contains an overview of the existing literature on managerial compensation, firm performance and other factors. Section III describes the research gap, objectives, hypothesis and methodology. Section IV describes the theoretical framework and basic models for this study. Section V presents and discusses the analysis and findings of the study and Section VI provides a conclusion.

Section II

Literature Review

In this section, a brief review of existing literature that has examined the relationship between executive compensation and firm performance is presented.

Lewellen and Huntsman (1970) conducted a study where they analysed 50 US firms at three-year intervals beginning from 1942 to 1963. The study provided strong evidence that top executives' compensation was heavily dependent upon generation of profits. The result of the study was also indicated that compared to firm sales, firm profits and stock market values were substantially more important in the determination of executive compensation [16].

Redling (1981) examined the relationship between CEO pay and company performance, by comparing the CEO salary growth and performance growth over a period of 5 years. The result showed a relationship between compensation and performance. Moreover, compensation to CEOs in the banking industry in the US had a significant vague relationship to performance [23].

Murphy (1985) conducted a study on corporate performance and managerial remuneration. The study included data on compensation and performance of 461 executives at 71 firms over a number of years. Fixed-effects models employed in the study and found that executive compensation was strongly positively related to corporate

performance as measured by shareholder return and growth in firm sales [19].

Gibbons and Murphy (1990) carried out a study which basically reviews the benefits, costs and tests of relative performance evaluation (RPE) in the CEOs compensation contracts. The findings of the study was strongly agree that RPE was used in compensation and retention decisions which affecting CEOs. CEO's pay and tenure were positively and significantly related to firm performance, but were negatively and significantly related to industry and market performance [12].

Agarwal, Makhija and Mandelker (1991) conducted a study to examine the relationship between top executive compensation and corporate performance in public utilities across different firms for ten years from 1975 to 1984. The result of the study revealed a positive relation between the change in CEO / Presidents' total compensation and stock performance, consistent with incentives to maximize stockholders wealth. From the study it was also found that increase in stock returns also increases the total compensation of executives. A significantly positive relationship between stock returns and growth in sales was also found from the study [2].

Mark et al. (1992) examined the relationship between executive compensation and firm performance using data from the Disclosure database of Fortune 500 companies. Gross profit, current ratio and total assets were used as a measure of financial performance of the firms. Basic pay plus bonus were used as a measure of executive compensation. The results indicated a small but significant relationship between executive pay and total assets of the firm. Regression results revealed that not more than 13% of the variance in executive pay could be accounted for using measures of corporate profitability (gross profit), efficiency (current ratio) and size (total assets) as measure of firm performance [18].

Conyon and Leech (1994) conducted a study to examine the determinants of a top director salary and bonus. Sample of 294 large UK listed firms were included in the study between 1983 and 1986. The result of the study revealed positive but very small pay elasticity estimated with respect to firm performance. It was also found that firm sales were important factors in explaining the top directors pay. Another key finding was that ownership control and concentration decrease the level of a top director's pay, but these variables do not affect the growth of his pay [8].

Conyon and Gregg (1994) carried out a study

considering the empirical determination of top directors' pay during the 1980s to find out whether limits to managerial discretion and organisational restructuring were really important in influencing top pay or not. Approximately 170 companies were included in the study during the year 1985 to 1990. It has been found from the result of the study that director pay was significantly related to shareholder returns; though the estimated elasticity was not high. Sales growth of the company was significantly raising top directors' remuneration above that which can be achieved by internal or organic growth [7].

Main et al. (1996) conducted a study utilising the UK panel data for 60 firms from the year 1981 to 1989. The study was provided evidence that due to executives' stock options there was a statistically significant relationship between a highest paid executive and firm performance [17].

Conyon (1997) conducted a study only considering cash compensation data for a sample of 213 large UK companies during the year 1988 to 1993. It was found that remuneration committees, an increasingly popular institutional device for setting top pay in the UK, might had some influence on director compensation but the result was not particularly robust. The result of the study revealed that there was only mixed evidence. It was also found that separating the roles of chairman and chief executive officer which might potentially mitigate agency problems associated with top pay setting, played a minor role in influencing director pay [6].

Kato (1997) carried out a study that examined the link between CEO compensation and firm performance in Japan. Panel data on individual CEO's salary and bonus of Japanese firms from the year 1986 to 1995 was used in the study. It was found that CEO's cash compensation was sensitive to firm performance, especially on accounting measures. However, stock market performance was indicated to be less important factor in the determination of CEO's compensation. One reason for an extremely modest link between CEO compensation and firm stock market performance in the period might be the fact that until 1997 executives' stock options were banned in Japan, except at small venture companies [15].

Hall and Liebman (1998) conducted a study using 15-years panel data from 1980 to 1994, on the large U.S. firms that contain detailed information on CEO compensation. It was found from the study that CEO compensation was highly responsive to firm performance [13].

Aggarwal and Samwick (1999) conducted a study on the effect of business risk on pay performance sensitivity for top management in a firm. In the study there were two firms, one with a high variance of performance measures and the other with a low variance. It was supposed that top management of both firms received same remuneration because the high-variance firm had good performance and the low-variance firm had poor performance [3].

Brunello, Graziano and Parigi (2001) conducted a study in Italy to investigate the sensitivity of top and middle level executive pay to firm performance. The study suggested that the design of managerial pay was affected by the specific economic environment in Italy. In case of the foreign owned firms, listed firms and firms those were affiliated to a multinational group; the sensitivity of executive pay to firm performance was stronger. On the other hand in case of domestic-owned firms, the pay-performance sensitivity was lower. The study also provided evidence regarding relative performance evaluation but it did not provide any evidence of career concerns in pay design [4].

Parthasarathy, Menon & Bhattacharjee (2006) conducted a study to establish the inter relationships between executive compensation, firm performance and also various corporate governance parameters by studying 409 BSE listed Indian companies. The study revealed that the CEOs who were promoters or owners, received higher compensation and also greater incentive compared to other ordinary CEO. From this study it was also found that CEOs of PSUs are significantly underpaid than the private sector firms in respect of compensation and incentive plan [21].

Crumley (2008) conducted a study to observe the relationship between firm performance and CEO compensation in the U.S. commercial banking industry. The study considered sample of 36 firms in the U.S. commercial banking industry for the period 2002 to 2003. The study results exhibited a weak relationship between CEO remuneration and firm performance [9].

Scholtz and Smith (2012) conducted a study between the year 2003 and 2010 on a sample of 58 South African companies listed on the Alternative Exchange (AltX) to identify the relationship between short-term executive compensation and the performance of the company and also to find out the measures as well as disclosures of corporate governance applicable to executive compensation. The study concluded that if executive remuneration was linked to company performance then it will be possible to increase the value of stakeholders over long-term [26].

Cao and O'Halloran (2012) conducted a study to find out how the implementation of long-term incentive compensation plans (LTIPs) effect the performance of 56 Irish publicly traded firms over 6 years from 2002 to 2007. A significant and positive relation was found between the adoption of LTIPs and long-term future market performance. But, there was no significant and positive relationship found between accounting performance and the adoption of LTIPs or between the adoption of LTIPs and short-term market performance [5].

Doucouliaagos, Graham and Haman (2012) carried out a study to investigate the dynamics and convergence in CEO pay among Australia's large corporations over 18 years period. It was found that CEO pay was driven by dynamic adjustments, firm size, board size, CEO tenure, and firm performance. Among the dynamic adjustments, past pay was considered as one of the explanatory variables in the study model. Considering the persistence nature of executive compensation, the impact of past pay along with firm performance on current compensation was examined in the study [10].

Sun et al. (2013) conducted a study to examine the relation between chief executive officer (CEO) compensation and firm performance of the US property-liability (P&L) insurance industry. The study revealed that revenue efficiency (RE) and cost efficiency (CE) were positively and significantly associated with total compensation. It was also found from the study that RE is associated with cash compensation while CE is associated with incentive compensation [27].

Abed, Suwaidan and Slimani (2014) carried out a study to identify the determinants which may affect the CEO compensation in developing countries namely in Jordan by using descriptive statistics and Pooled Ordinary Least Squared (OLS) regression model. There was no statistically significant effect of board size, institutional ownership, performance, leverage and CEO ownership on CEO compensation was found. The result of the study suggested changing the CEO from time to time to avoid paying him/her a lot because tenure was positively related to the CEO compensation [1].

Faria, Martins, Brandao (2014) conducted a study to examine the relationship between corporate performance and the CEO compensation. The study conclude that high-tech firms had contributed to increase in total CEO compensation for both short-term and long-term periods together with accruals of financial performance measurements and high-technology firms also tend to use more sophisticated performance measurements to determine CEO compensation [11].

Olaniyan (2015) carried out a study to find out the effects of executive compensation on the performance of firms and a negative significant relationship between executive compensation and firm performance which depicts the picture of poor corporate governance. The study suggested that to encourage the firms' performance government should strictly bind the executive compensation to firm performance [20].

Samina and Zaman (2015) carried out a study to identify which type of compensation (CEO compensation or total compensation of all employees) have more control over the profitability of private commercial banks in Bangladesh. There are no statistical significant relationship was found between CEO compensation and bank's profitability but there are statistical significant relationship was found between total compensation package of all the employees of the bank and the profitability of the banks either positively or negatively. The study drawn the conclusion that if attractive compensation can be provided to the employees then they always motivated and properly work for the organization and in this way banks can bring better return [25].

Raithatha and Komera (2016) carried out a study to empirically examine the relationship between executive compensation and firm performance among Indian firms from the year 2002 to 2012. Sample firms were classified into two sub-samples-large and small to separately investigate the relationship between pay and performance. The study concluded that the contrasting result regarding the pay-performance relationship between larger sample firms, business group affiliated firms and small sample firms was basically result of under developed nature of institutional mechanisms and weak activities of investors in India [22].

Section III

Research Gap

Based on the review of existing literature, it is found that in India there are limited studies dealt with the relationship between managerial compensation and financial performance, size of the business and risk in manufacturing companies.

Research Objective

The main objective of the study is to find out the relationship between managerial compensation and financial performance of Indian automobile companies. Specific objectives are:

(a) to study relationship between accounting-base performance and managerial compensation.

(b) to study relationship between market-base performance and managerial compensation.

(c) to study relationship between firm risk and managerial compensation.

(d) to study relationship between firm size and managerial compensation.

Hypothesis

The following hypotheses are considered for the study:

H₀₁: There is no relationship between financial performance and managerial compensation.

H_{A1}: There is a relationship between financial performance and managerial compensation.

H₀₂: There is no relationship between firm risk and managerial compensation.

H_{A2}: There is a relationship between firm risk and managerial compensation.

H₀₃: There is no relationship between firm size and managerial compensation.

H_{A3}: There is a relationship between firm size and managerial compensation.

Methodology

We have selected seven Indian automobile companies for our study on the basis of sales turnover above 500 crores. Length of the study period is taken to be 14 years ranging between 2003 and 2016; naturally up to the latest possible year. As we have decided to examine the relationship between managerial compensation and financial performance, we have considered consolidated executive compensation as the proxy of managerial compensation. We have also taken into consideration both accounting measures as well as market performance measures to represent performance of firms. Two of the most commonly used profitability measures are Return on Capital Employed (ROCE) as accounting measure of performance and Market capitalization which is considered as the market-based measure of firm performance. Data relating to managerial compensation, ROCE and market capitalization have been collected from the Capitaline database.

Firm specific characteristics such as size and leverage are expected to influence managerial compensation and hence, these two variables are

considered in this study. It is to be mentioned that Rosen (1992) in his study, gives a theoretical justification for the positive relation between managerial compensation and firm size. Firms with higher leverage ratios are expected to have lower executive compensation practices [24]. Debt financing with its fixed contractual obligations acts as a correcting device for managers and mitigates the agency problems (Jensen, 1986) [14]. If the firms consider debt as a proper mechanism, they need not solely depend on compensation to incentivize their executives.

Description of Variables

| Sl. No. | Variable | Abbreviation | Measurement |
|---------|-----------------------------|--------------|--------------------------------|
| 1. | Managerial Compensation | Ln (ManComp) | Sum of Managerial Compensation |
| 2. | Accounting-base Performance | ROCE | EBIT / Capital Employed |
| 3. | Market-base Performance | Ln_mkt_cap | Number of Shares X Share Price |
| 4. | Risk | Debt-equity | Debt/ Equity |
| 5. | Firm Size | Ln_size | Sales Turnover |

Statistical Tools and Techniques

For analysis of the nature of the variables we have used descriptive study. We have also conducted Regression Analysis to find out any significant relationship among the variables.

Section IV

Theoretical Framework and Basic Models

Managerial Compensation

The Companies Act, 2013 has for the first time recognized the concept of Key Managerial Personnel. As per section 2(51) "key managerial personnel", in relation to a company, means – (i) the Chief Executive Officer or the managing director or the manager; (ii) the company secretary; (iii) the whole-time director; (iv) the Chief Financial Officer; and (v) such other officer as may be prescribed.

Section 197 of the Companies Act, 2013 prescribed the maximum ceiling for payment of managerial remuneration by a public company to its managing director, whole-time director and manager which shall not exceed 11% of the net profit of the company in that financial year computed in accordance with section 198 except that the remuneration of the directors shall not be deducted from the gross profits. Further, the company in general meeting may, with the approval of the Central Government,

authorize the payment of remuneration exceeding 11% of the net profits of the company, subject to the provisions of Schedule V. The net profits for the purposes of this section shall be computed in the manner referred to in section 198.

Agency theory states that both the employer and employee are the stakeholders of the company. The compensation which is paid to the employee is known as 'agency cost'. The employee always tries to increase the agency cost and the employer always try to minimize it. In that case, this theory offers that the compensation should be decided in such a manner that should keep the interest of both the parties i.e. principal (owners) and agent (managers). According to this theory the compensation in the form of salary or wages can be decided on the basis of the outcome or based on the behaviour of an employee.

Return on Capital Employed

Return on capital employed (ROCE) is a financial ratio that determines a company's profitability and the efficiency with which its capital is employed by comparing net operating profit to capital employed. A higher ROCE implies a more economical use of capital; the ROCE should be higher than the capital cost. ROCE is a long-term profitability ratio because it shows how effectively assets are performing while taking into consideration long-term financing. It is expected that higher the ROCE, greater the managerial compensation and vice-versa.

Market Capitalisation

Market capitalization (market cap) is the market value of a publicly traded company's outstanding shares. It is also known as Market Cap. It is found in most of the studies that higher the market value of a firm, the greater the market capitalization and vice-versa.

Leverage

It refers to the use of borrowed funds in the purchase of an asset, with the anticipation that after tax income from the asset and asset price appreciation will exceed the borrowing cost. It is generally found that there is inverse relationship between leverage and managerial compensation.

Size of the business

Size of the business is determined on the basis of sales turnover. It is found that there is linear relationship between firm size and managerial

compensation.

Basic Model of the study

Managerial Compensation = f (Financial performance, Firm characteristics)

Managerial compensation is influenced by the firm's performance. We empirically investigate the presence of relationship between managerial compensation and firm performance employing the managerial compensation equation.

$$\text{Ln} (\text{ManComp})_{it} = a_0 + \beta_1 Y_{it} + \gamma Z_{it} + \tau_t + \varepsilon_{it} \quad (1)$$

Where, $\text{Ln} (\text{ManComp})$ is the natural logarithm of managerial compensation. Y_{it} is a measure of performance of the i^{th} firm in t^{th} year. Z is a vector of other firm specific variables that affect managerial compensation. τ refers to time dummies and ε is a white noise term.

We estimate Eq. (1) using OLS.

Further, we consider that the current managerial compensation is also influenced by the past compensation, along with the firm's performance.

We estimate Eq. (2) using OLS.

$$\text{Ln} (\text{ManComp})_{it} = a_0 + \delta \text{Ln} (\text{ManComp})_{it-1} + \beta_1 Y_{it} + \gamma Z_{it} + \tau_t + \varepsilon_{it} \quad (2)$$

In order to confirm that our estimation is appropriate, we have done outliers test, checking normality of residuals, test of heteroskedasticity, checking for multicollinearity and model specification test. All of them support the study. With regard to the outliers, it is to be mentioned that all data points seem to be in range no outliers observed. Then, we have done normality test. Normality of residuals is only required for valid hypothesis testing, that is, the normality assumption assures that the p-values for the t-tests and F-test will be valid. For this purpose, we have conducted Kernel density estimate and The result seems to be a minor and trivial deviation from normality. We can accept that the residuals are close to a normal distribution. After that, we conduct test for Heteroskedasticity. We have taken robust standard errors in regression analysis to control for heteroskedasticity. So, Breusch-Pagan test is not essential for test of heteroskedasticity. But we may conduct White's test to test the null hypothesis that the variance of the residuals is homogenous. Therefore, if the p-value is very small, we would have to reject the null hypothesis and accept the alternative hypothesis that the variance is not homogenous. So in this case, the evidence is favour the null hypothesis that the variance is

homogeneous as p-value(s) is not very small.

We have tested the VIF after the regression to check for multicollinearity. As a rule of thumb, a variable whose VIF values are greater than 10 may merit further investigation. Here, all the values are less than 10. Tolerance, defined as 1/VIF, is used by many researchers to check on the degree of collinearity and tolerance values are not lower than 0.1. Here, our result supports for non-existence of multicollinearity.

A model specification error can occur when one or more relevant variables are omitted from the model or one or more irrelevant variables are included in the model. Model specification errors can substantially affect the estimate of regression coefficients. There are a couple of methods to detect specification errors. The ovtest command performs another test of regression model specification. It performs a regression specification error test (RESET) for omitted variables. As the p-value for ovtest is slightly greater than .05, there is non-existence of model specification error.

Section V

Analysis and Findings

Table 1: Summary Statistics

| Variable | No of Obs. | Mean | Std. Dev. | Min | Max |
|---------------|------------|----------|-----------|----------|----------|
| Ln (Man Comp) | 98 | 17.19813 | 2.148173 | 12.61818 | 21.01295 |
| ROCE | 98 | 20.63286 | 21.47637 | -18.88 | 99.22 |
| Debt-equity | 98 | 1.048265 | 2.347703 | 0 | 13.95 |
| Ln_mkt_cap | 98 | 8.704618 | 1.707933 | 4.399252 | 12.0225 |
| Ln_size | 98 | 8.420573 | 1.796929 | 3.816173 | 10.9024 |

Source: Authors' own calculation.

From Table 1, we found that managerial

compensation have its mean value is 17.1981, its standard deviation is 2.1481 and the value of managerial compensation lies between 12.6181 to 21.0129. ROCE have its mean value is 20.6328 and its standard deviation is 21.4763. The value of ROCE lies between -18.88 to 99.22. Similarly, market capitalization has its mean value 8.7046 and standard deviation is 1.7079 and the value of market capitalization lies between 4.3992 to 12.0225. Debt-equity lies between 0 to 13.95. The value of business size ranges from 3.8161 to 10.9024.

From Table 2 we can say that the model is fit for study as p-value of F statistic is less than 0.50 and the model can explain 87% of the managerial compensation as the value of R² is 0.8732. From Regression analysis 1, we found that Return on Capital Employed (ROCE) and size of the company have significant positive influence on managerial compensation. But, in case of debt equity the significant negative relation exists with managerial compensation. This indicates if profitability (return on capital employed is used as a measure) increase, the managerial personnel can demand more compensation. There is also a significant positive relationship found with market capitalization. It indicates that if market value of share increases managers could demand for higher remuneration. On the other hand, a significant negative relationship is seen between managerial compensation and debt equity. This shows that use of more debt funds in the capital structure could restrict the managers for not to demand for higher compensation.

From Regression Analysis 2 (as mentioned in Table 3) we found that probability of F statistic is also less than 0.50. So, our model is fit for the study and the model can explain 93% of the managerial compensation as the value of R² is 0.9349. Here, we found that Return on Capital

Table 2: Regression Analysis 1

| Linear Regression (Equation 1) | | | | Number of obs = 98 | | |
|-----------------------------------|--------|------------------|-------|--------------------|----------------------|---------|
| | | | | F(4,93) = 307.29 | | |
| | | | | Prob> F = 0.0000 | | |
| | | | | R-square = 0.8732 | | |
| | | | | Root MSE = .78129 | | |
| Ln (ManComp) | Coef. | Robust Std. Err. | t | p > t | [95% conf. Interval] | |
| ROCE | .0378 | .0033 | 11.44 | 0.000 | .0313 | .0444 |
| Ln_mkt_cap | .1807 | .0683 | 2.64 | 0.010 | .0449 | .3165 |
| Debt-equity | -.0967 | .0183 | -5.28 | 0.000 | -.1331 | -.0603 |
| Ln_size | .6565 | .0628 | 10.45 | 0.000 | .5318 | .7812 |
| cons | 9.4161 | .4792 | 19.65 | 0.000 | 8.4644 | 10.3679 |

Source: Authors' own calculation.

Table 3: Regression Analysis 2

| Linear Regression (Equation 2) | | | Number of obs = 98 F(5,92) = 491.87 Prob> F = 0.0000 R-square = 0.9349 Root MSE = .5627 | | | |
|-----------------------------------|--------|------------------|---|--------|----------------------|--------|
| Ln (ManComp) | Coef. | Robust Std. Err. | t | p > t | [95% conf. Interval] | |
| ROCE | .0164 | .0037 | 4.44 | 0.000 | .0091 | .0238 |
| Ln_mkt_cap | .0516 | .0603 | 0.86 | 0.394 | -.0682 | .17155 |
| Ln (Mancomp)t-1 | .6161 | .0794 | 7.76 | 0.000 | .4583 | .7738 |
| Debt-equity | -.0367 | .0212 | -1.73 | 0.087 | -.0789 | .0054 |
| Ln_size | .2804 | .0909 | 3.08 | 0.003 | .0998 | .4610 |
| cons | 3.5677 | .7600 | 4.69 | 0.000 | 2.0582 | 5.0771 |

Source: Authors' own calculation.

Employed (ROCE) and size of the company have positive influence on managerial compensation. We also found that one year lag managerial compensation has significant positive relationship with managerial compensation. Thus, we may infer that compensation of previous year has impact on managerial compensation of current year. But, in case of debt equity the negative significant relation exists with managerial compensation.

Section VI

Conclusion

The purpose of the study is to examine the nexus between managerial compensation and firm performance, size of the business and risk among automobile companies in India. The study shows that there is significant positive relationship exists between managerial compensation and size of the firm, ROCE and also managerial compensation (lag 1). From this result it can be inferred that managerial compensation is influenced by the size of the firm, managerial compensation of previous year and also by the return on capital employed of the current year. But market value of shares is not a determinant of managerial compensation as market capitalisation has no significant relation with the managerial compensation. Debt equity ratio has significant negative relation with the managerial compensation and it can be said that debt has inverse relation with the managerial compensation.

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